P-DUKE POWER

UFEC30 Series

Chassis-Mount DC-DC Converter
Up to 30 Watts

3 YEARS WARRANTY

RoHS COMPLIANT

REACH COMPLIANT

Automation | Datacom | IPC

Industry | Measurement | Telecom

Automobile | Boat | Charger

Medical | PV | Railway

CE CB

1600 VDC Isolation Voltage | 2 : 1 Input Range | FUSE Installed | INRUSH CURRENT LIMIT | Internal EN55032 Class B Filter | NO Min. Load Required | REMOTE ON OFF | REVERSE POLARITY PROTECTION | OCP | OVP | SCP | UVP

PART NUMBER STRUCTURE

UFEC30 - 48 S 05 - R EC

Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Conformal Coating Option	Assembly Option
	12:9.5~18 **24:**18~36 **48:**36~75	**S:**Single	**3P3:**3.3 **05:**5 **12:**12 **15:**15 **24:**24 **28:**28	□: None **R:** Conformal Coating	□: None **EC:** Enclosed Mounting Type **DR:** Din Rail Mounting Type **ED:** Enclosed & Din Rail Mounting Type
		D:Dual	**12:**±12 **15:**±15		

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25℃ unless otherwise noted

Model Number	Input Range VDC	Output Voltage VDC	Output Current @Full Load A	Input Current @ No Load mA	Efficiency %	Maximum Capacitor Load μF
UFEC30-12S3P3	9.5 ~ 18	3.3	6	117	83	19500
UFEC30-12S05	9.5 ~ 18	5	6	98	85	10200
UFEC30-12S12	9.5 ~ 18	12	2.5	176	86	3240
UFEC30-12S15	9.5 ~ 18	15	2	218	86	1100
UFEC30-12S24	9.5 ~ 18	24	1.25	72	85	510
UFEC30-12S28	9.5 ~ 18	28	1	54	85	340
UFEC30-12D12	9.5 ~ 18	±12	±1.25	66	85	±1020
UFEC30-12D15	9.5 ~ 18	±15	±1	48	85	±675
UFEC30-24S3P3	18 ~ 36	3.3	6	51	85	19500
UFEC30-24S05	18 ~ 36	5	6	51	87	10200
UFEC30-24S12	18 ~ 36	12	2.5	83	88	3300
UFEC30-24S15	18 ~ 36	15	2	94	88	1100
UFEC30-24S24	18 ~ 36	24	1.25	37	87	510
UFEC30-24S28	18 ~ 36	28	1	38	87	340
UFEC30-24D12	18 ~ 36	±12	±1.25	33	87	±1020
UFEC30-24D15	18 ~ 36	±15	±1	34	87	±675
UFEC30-48S3P3	36 ~ 75	3.3	6	31	86	19500
UFEC30-48S05	36 ~ 75	5	6	36	88	10200
UFEC30-48S12	36 ~ 75	12	2.5	37	89	3300
UFEC30-48S15	36 ~ 75	15	2	57	89	1100
UFEC30-48S24	36 ~ 75	24	1.25	28	87	510
UFEC30-48S28	36 ~ 75	28	1	28	87	340
UFEC30-48D12	36 ~ 75	±12	±1.25	22	87	±1020
UFEC30-48D15	36 ~ 75	±15	±1	22	87	±675

INPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range		12Vin(nom)	9.5	12	18	
		24Vin(nom)	18	24	36	VDC
		48Vin(nom)	36	48	75	
Input fuse	slow blow	12Vin(nom)		6		
		24Vin(nom)		6		A
		48Vin(nom)		4		
In-rush current				15		A
Start up voltage		12Vin(nom)			9.5	
		24Vin(nom)			18	VDC
		48Vin(nom)			36	
Shutdown voltage		12Vin(nom)	7.5	8	9	
		24Vin(nom)	15.5	16	17.5	VDC
		48Vin(nom)	32.5	33	35.5	
Start up time	Constant resistive load	Power up		100		ms
		Remote ON/OFF		25		
Input surge voltage	100ms, max.	12Vin(nom)			36	
		24Vin(nom)			50	VDC
		48Vin(nom)			100	
Remote ON/OFF	Referred to –Vin pin	Positive logic DC-DC ON		Open or 3 ~ 12VDC		
		DC-DC OFF		Short or 0 ~ 1.2VDC		
		Input current of Ctrl pin	-0.5		0.5	mA
		Remote off input current		2.5		mA

OUTPUT SPECIFICATIONS

Parameter	Conditions			Min.	Typ.	Max.	Unit
Voltage accuracy			3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Line regulation	Low Line to High Line at Full Load			-0.5		+0.5	%
Load regulation	No Load to Full Load		3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL		Dual	-5.0		+5.0	%
Voltage adjustability	Single output		28Vout Others	-3 -10		+17 +10	%
Ripple and noise	Measured by 20MHz bandwidth	Single	3.3Vout, 5Vout 12Vout, 15Vout 24Vout, 28Vout		50 75 100		mVp-p
		Dual	All		100		
Temperature coefficient				-0.02		+0.02	%/℃
Transient response recovery time	25% load step change				300		μs
Over voltage protection	Zener diode clamp		3.3Vout 5Vout 12Vout 15Vout 24Vout 28Vout		3.9 6.2 15 18 30 36		VDC
Output indicator					Green LED		
Over load protection	% of Iout rated					150	%
Short circuit protection					Continuous, automatics recovery		

GENERAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis	1600 1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			270	300	330	kHz
Safety meets	IEC/ UL/ EN60950-1				UL:E193009 CB:UL(Demko)	
Chassis material						Aluminum
Conformal coating						Impregnating varnish
Weight						110g (3.88oz)
MTBF	MIL-HDBK-217F, Full load					1.259 x 10^6 hrs

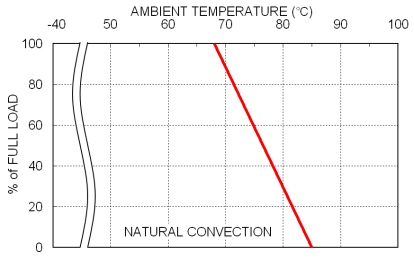
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		Without derating With derating	-40 +61		+61 +93	℃
Over temperature protection	Case of DC/DC module			+110		℃
Storage temperature range			-40		+105	℃
Thermal shock						MIL-STD-810F
Vibration		□□S□□ □□S□□ -EC □□S□□ -DR □□S□□ -ED				MIL-STD-810F MIL-STD-810F IEC60068-2-6 IEC60068-2-6
Relative humidity						5% to 95% RH

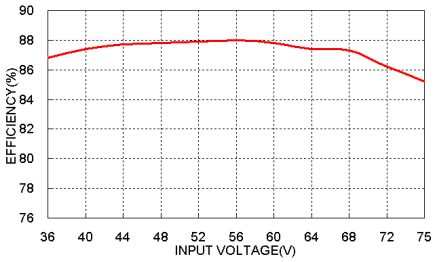
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032		Class B
ESD	EN61000-4-2	Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV	Perf. Criteria A
Surge	EN61000-4-5	± 1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	100A/m continuous; 1000A/m 1 second	Perf. Criteria A

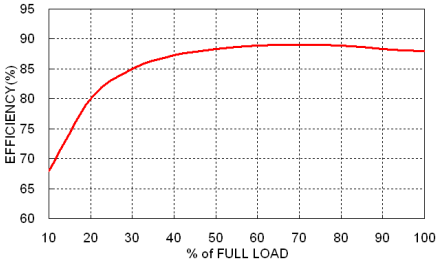
CHARACTERISTIC CURVE



UFEC30-48S05 Derating Curve



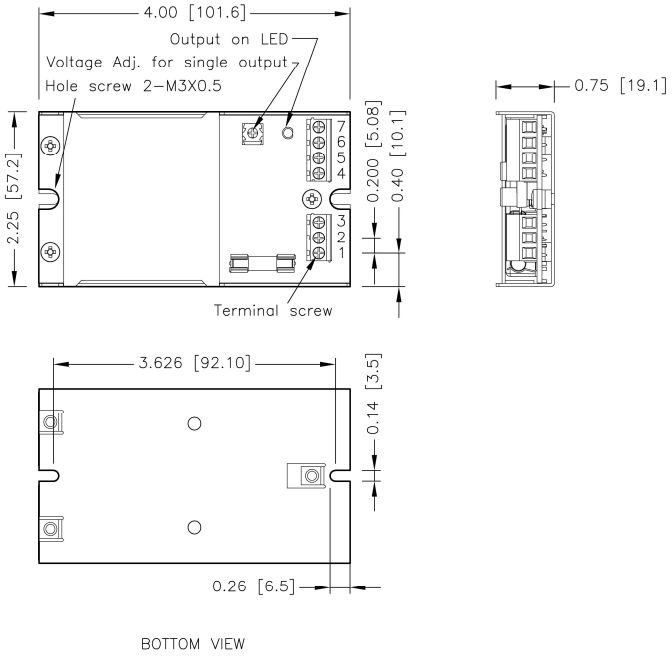
UFEC30-48S05 Efficiency vs. Input Voltage



UFEC30-48S05 Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



TERMINAL CONNECTION

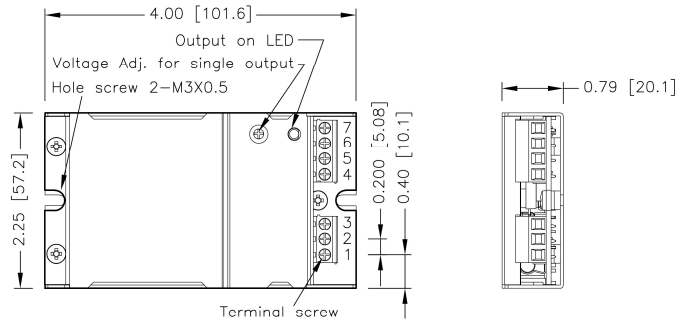
NO.	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

※ NC：No Connection

※ Screw terminals – wire range from 14 to 18 AWG

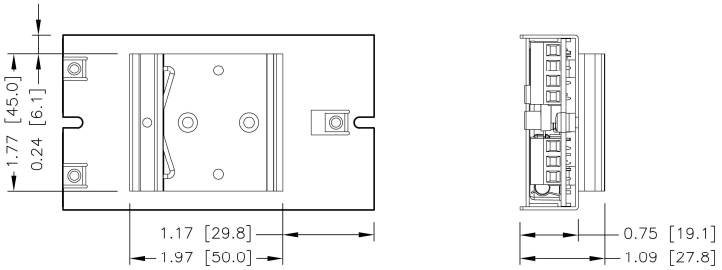
MECHANICAL DRAWING(CONTINUED)

ENCLOSED MOUNTING TYPE



TOP VIEW

DIN RAIL MOUNTING TYPE



BOTTOM VIEW

1. All dimensions in Inch [mm]
2. Tolerance : X.XX±0.02 [X.X±0.5]
   X.XXX±0.01 [X.XX±0.25]
3. Hole screw locked torque :
   MAX 5.0kgf－cm/0.49N－m
4. Terminal screw locked torque :
   MAX 2.5kgf－cm/0.25N－m

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